

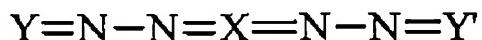
Application No. 10/804,719

polyester binders include ortho-polyethylene terephthalate (e.g. OPET® TR-4 from Kanebo Ltd., Yamaguchi, Japan).

Page 52, Abstract

This invention includes an improved organophotoreceptor having an electrically conductive substrate and a photoconductive element on the electrically conductive substrate where the photoconductive element comprises:

(a) a charge transport material having the formula



where Y and Y' comprise, each independently, a 9-fluorenylidene group; and X is a conjugated linking group that allows the delocalization of pi electrons over at least Y and Y', such as a 1,2-ethanediylidene group, a 1,4-phenylenedimethylidyne group, a 2,4-cyclohexadienylidene group, a 2,5-cyclohexadienylidene group, a bicyclohexylidene-2,5,2',5'-tetraene group, a bicyclohexylidene-2,4,2',4'-tetraene group, or a combination thereof; and (b) a charge generating compound. Corresponding electrophotographic apparatuses and imaging methods are described.

AMENDMENTS TO THE CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier. Those claims not cancelled or withdrawn but amended by the current amendment utilize the following notations for amendment: 1. deleted matter is shown by strikethrough for six or more characters and double brackets for five or less characters; and 2. added matter is shown by underlining.

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1. (Currently amended) An organophotoreceptor comprising an electrically conductive substrate and a photoconductive element on the electrically conductive substrate, the photoconductive element comprising:

(a) a charge transport material having the formula



where Y and Y' comprise, each independently, a 9-fluorenylidene group and X is a conjugated linking group that allows the delocalization of pi electrons over at least Y and Y' comprises a 1,2-ethanediylidene group, a 1,4-phenylenedimethylidyne group, a 2,4-cyclohexadienylidene group, a 2,5-cyclohexadienylidene group, a bicyclohexylidene-2,5,2',5'-tetraene group, a bicyclohexylidene-2,4,2',4'-tetraene group, a $(C_6R_1R_2R_3R_4)_n$ group or a combination thereof.

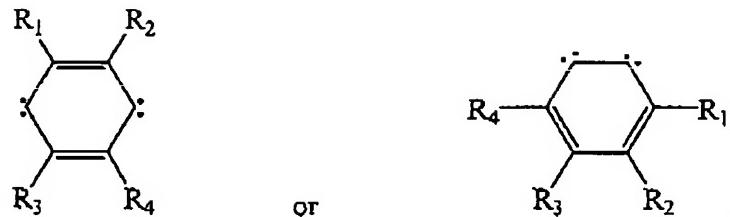
where the C_6 group is a cyclohexadienylidene group with substituents $R_1R_2R_3R_4$; n is an integer between 1 and 20, inclusive; and R_1 , R_2 , R_3 , and R_4 , each independently, are a hydrogen, a halogen, an amino group, a nitro group, a cyano group, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group; and

(b) a charge generating compound.

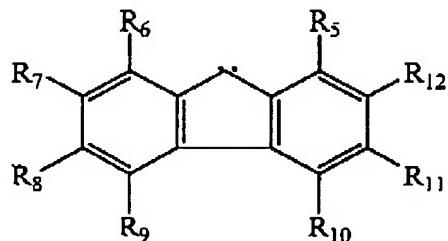
2-3. (Cancelled)

4. (Currently amended) An organophotoreceptor according to claim [[3]] 1 wherein the $C_6R_1R_2R_3R_4$ group has one of the following formulae:

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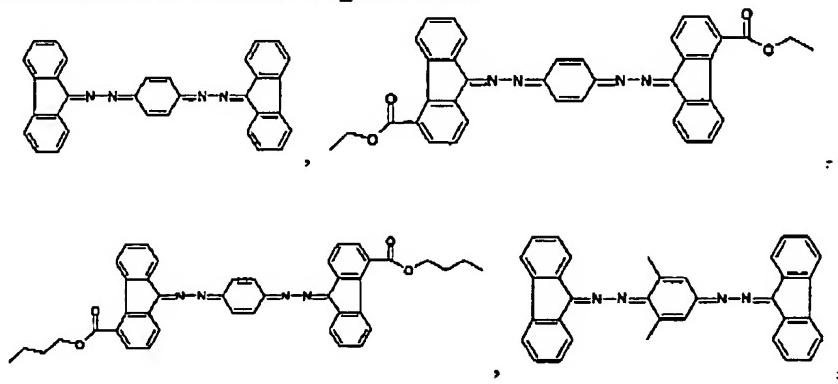


5. (Currently amended) An organophotoreceptor according to claim 1 wherein Y and Y', each independently, have the following formula:

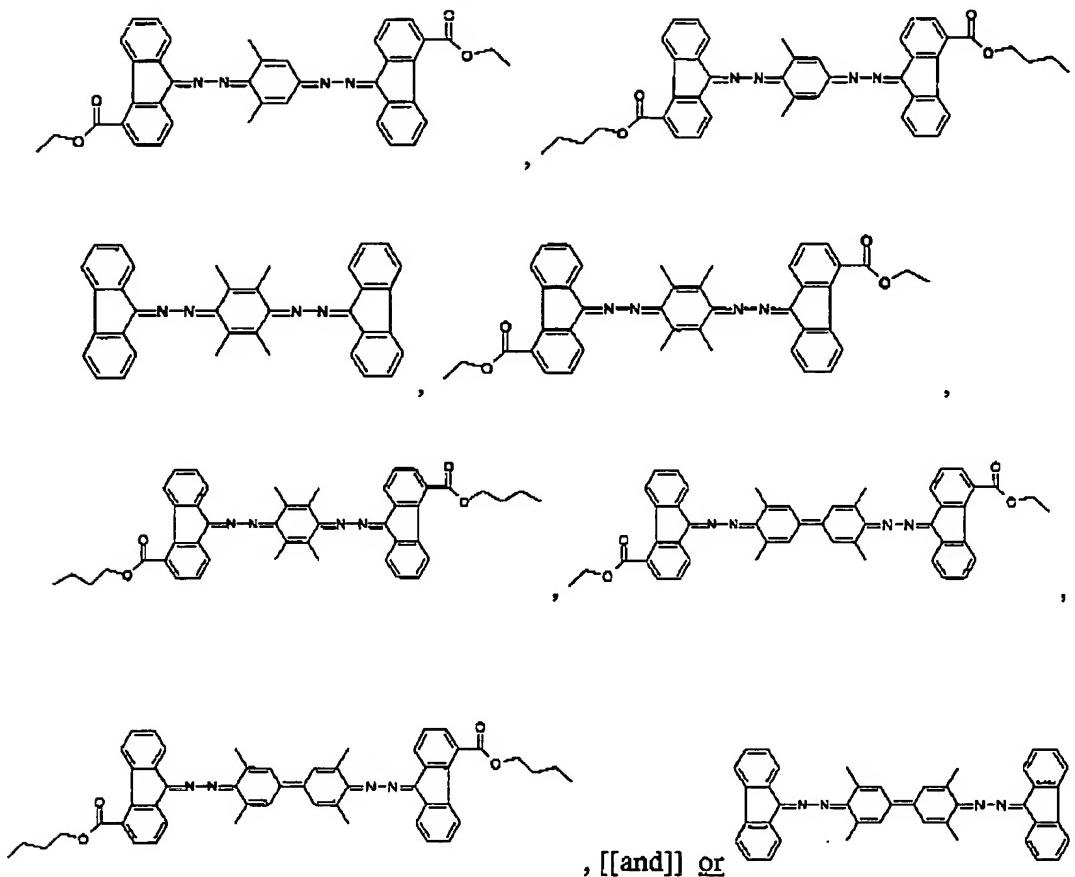


where R₅, R₆, R₇, R₈, R₉, R₁₀, R₁₁, and R₁₂, each independently, are a hydrogen, a halogen, a hydroxyl group, a thiol group, a carboxyl group, an amino group, a nitro group, a cyano group, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group, or part of a ring group.

6. (Currently amended) An organophotoreceptor according to claim 1 wherein the charge transport material has the following formulae:



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7. (Original) An organophotoreceptor according to claim 1 comprising:

- (a) a charge transport layer comprising the charge transport material and a polymeric binder; and
- (b) a charge generating layer comprising the charge generating compound and a polymeric binder.

8. (Original) An organophotoreceptor according to claim 1 wherein the photoconductive element further comprises a second charge transport material.

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9. (Original) An organophotoreceptor according to claim 8 wherein the second charge transport material comprises a charge transport compound.

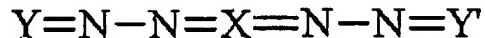
10. (Currently amended) An organophotoreceptor according to claim 1 wherein the organophotoreceptor is in the form of a drum or a flexible belt.

11. (Currently amended) An electrophotographic imaging apparatus comprising:

(a) a light imaging component; and

(b) an organophotoreceptor oriented to receive light from the light imaging component, the organophotoreceptor comprising an electrically conductive substrate and a photoconductive element on the electrically conductive substrate, the photoconductive element comprising:

(i) a charge transport material having the formula



where Y and Y' are, each independently, a 9-fluorenylidene group and X is a conjugated linking group that allows the delocalization of pi electrons over at least Y and Y' comprises a 1,2-ethanediylidene group, a 1,4-phenylenedimethylidyne group, a 2,4-cyclohexadienylidene group, a 2,5-cyclohexadienylidene group, a bicyclohexylidene-2,5,2',5'-tetraene group, a bicyclohexylidene-2,4,2',4'-tetraene group, a (C₆R₁R₂R₃R₄)_n group or a combination thereof,

where the C₆ group is a cyclohexadienylidene group with substituents R₁R₂R₃R₄; n is an integer between 1 and 20, inclusive; and R₁, R₂, R₃, and R₄, each independently, are a hydrogen, a halogen, an amino group, a nitro group, a cyano group, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group; and

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(ii) a charge generating compound.

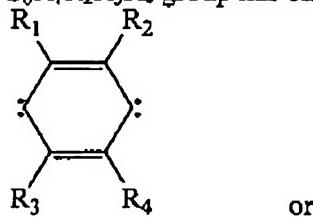
12. (Original) An electrophotographic imaging apparatus of claim 11 further comprising a toner dispenser.

13. (Original) An electrophotographic imaging apparatus of claim 11 wherein the organophotoreceptor further comprises a second charge transport material.

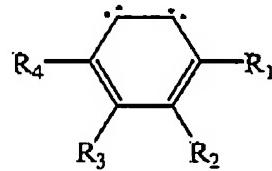
14. (Original) An electrophotographic imaging apparatus according to claim 13 wherein the second charge transport material comprises a charge transport compound.

15-16. (Cancelled)

17. (Currently amended) An electrophotographic imaging apparatus according to claim [[16]] 11 wherein the $C_6R_1R_2R_3R_4$ group has one of the following formulae:

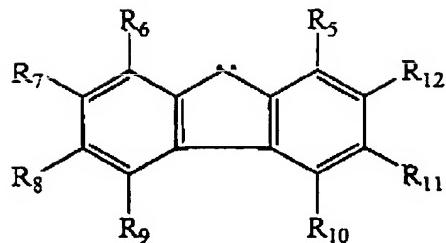


or



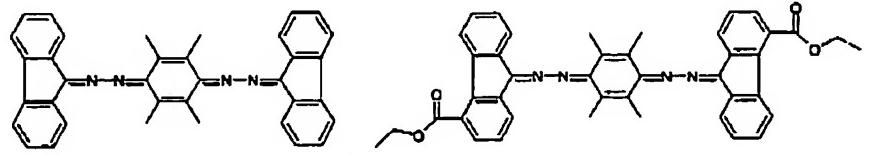
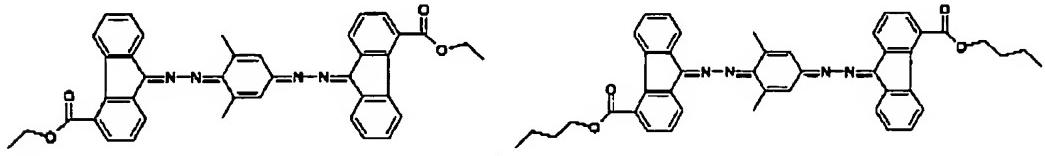
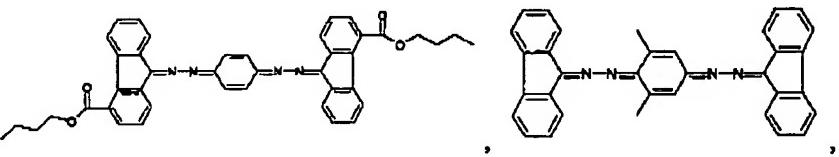
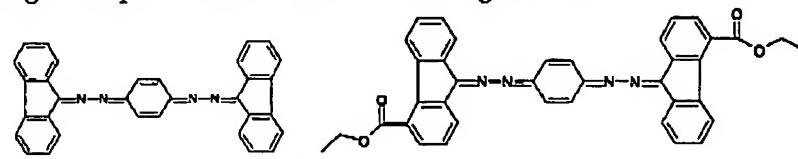
18. (Currently amended) An electrophotographic imaging apparatus according to claim 11 wherein Y and Y', each independently, have the following formula:

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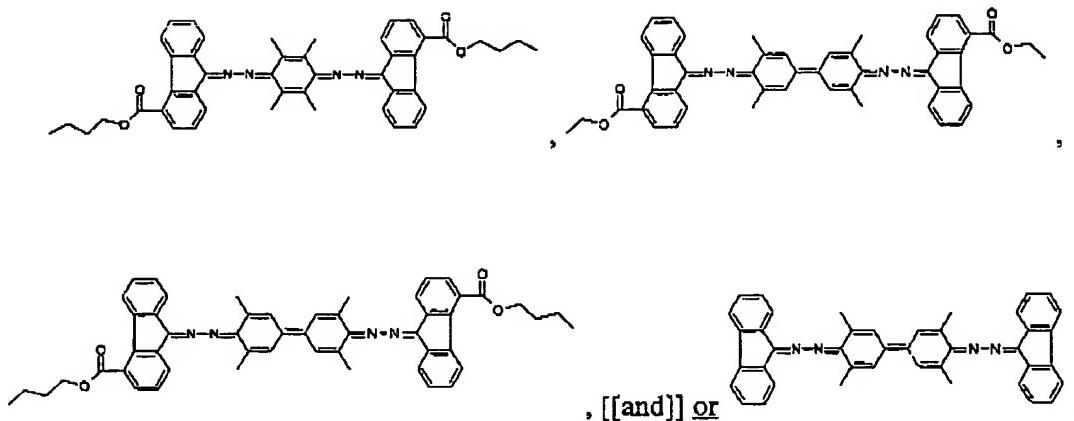


where R₅, R₆, R₇, R₈, R₉, R₁₀, R₁₁, and R₁₂, each independently, are a hydrogen, a halogen, a hydroxyl group, a thiol group, a carboxyl group, an amino group, a nitro group, a cyano group, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group, ~~or part of a ring group~~.

19. (Currently amended) An electrophotographic imaging apparatus of claim 11 wherein the charge transport material has the following formulae:

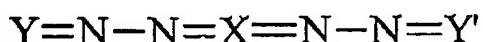


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20-27. (Cancelled)

28. (Currently amended) A charge transport material having the formula



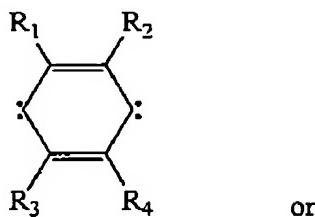
where Y and Y' are, each independently, a 9-fluorenylidene group and X is a conjugated linking group that allows the delocalization of pi electrons over at least Y and Y'. comprises a 1,2-ethanediylidene group, a 1,4-phenylenedimethylidyne group, a 2,4-cyclohexadienylidene group, a 2,5-cyclohexadienylidene group, a bicyclohexylidene-2,5,2',5'-tetraene group, a bicyclohexylidene-2,4,2',4'-tetraene group, a (C₆R₁R₂R₃R₄)_n group or a combination thereof.

where the C₆ group is a cyclohexadienylidene group with substituents R₁R₂R₃R₄; n is an integer between 1 and 20, inclusive; and R₁, R₂, R₃, and R₄, each independently, are a hydrogen, a halogen, an amino group, a nitro group, a cyano group, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group.

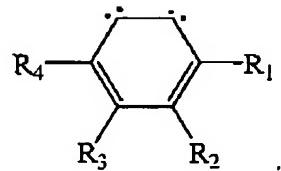
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29-30. (Cancelled)

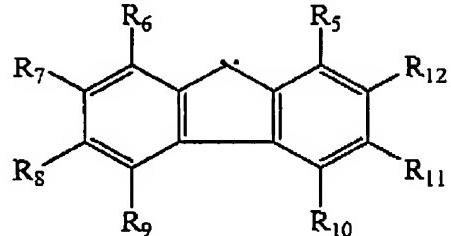
31. (Currently amended) A charge transport material according to claim [[29]] 28 wherein the $C_6R_1R_2R_3R_4$ group has one of the following formulae:



or



32. (Currently amended) A charge transport material according to claim 28 wherein Y and Y' , each independently, have the following formula:



where R_5 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_{11} , and R_{12} , each independently, are a hydrogen, a halogen, a hydroxyl group, a thiol group, a carboxyl group, an amino group, a nitro group, a cyano group, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group, or part of a ring group.

33. (Currently amended) A charge transport material of claim 28 wherein the charge transport material has the following formulae:

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